

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A particulate absorbent material comprising a[n] extruded molecular starch network, of starch molecules the starch comprising at least 90% (w/w) amylopectin, wherein said particulate absorbent material comprises particles ranging from 89 μm to 589 μm .
2. (Currently amended) The particulate absorbent material of claim 1, wherein the molecular starch network comprises is self-entangled starch.
3. (Currently amended) The particulate absorbent material of claim 1, wherein the molecular starch network comprises is cross-linked starch.
4. (Currently amended) The particulate absorbent material of claim[s] 1, wherein the molecular starch network is produced from a waxy starch.
5. (Currently amended) The particulate absorbent material of claim 4, wherein said waxy starch is selected from the group consisting of waxy maize starch, waxy wheat starch, waxy rice starch, waxy sorghum starch, waxy potato starch, waxy cassava starch, waxy barley starch and mixture[s] thereof.
6. (Original) The particulate absorbent material of claim 5, wherein said waxy starch is waxy maize starch.
7. (Original) The particulate absorbent material of claim 3, wherein said cross-linked starch is cross-linked with a cross-linker selected from the group consisting of sodium trimetaphosphate, sodium tripolyphosphate, phosphorous oxychloride, phosphoryl chloride, epichlorohydrin, divinyl sulfone, ethylene glycol diglycidyl ether, chlorohydrin, bromohydrin, N,N'-Methylenebisacrylamide, alkylenebisacrylamides, diepoxyalkanes,

diglycidyl ethers, glyoxal, glutaraldehyde, dialdehydes, activated polyethylene glycols, and mixture thereof.

8. (Original) The particulate absorbent material of claim 7, wherein the cross-linker is selected from the group consisting of phosphorous oxychloride, sodium trimetaphosphate, sodium tripolyphosphate and mixtures thereof.
9. (Original) The particulate absorbent material of claim 8, wherein the cross-linker is sodium trimetaphosphate.
10. (Withdrawn) A process for producing a particulate absorbent material as defined in claim 2, comprising the steps of:
 - (a) mixing a starch comprising at least 90 % amylopectin with water to produce a paste;
 - (b) feeding the paste into an extruder to produce an extrudate;
 - (c) aging the extrudate; and
 - (d) grinding the extrudate.
11. (Withdrawn) A process for producing a particulate absorbent material as defined in claim 3, comprising the steps of:
 - (a) mixing a starch comprising at least 90 % amylopectin with water, an alkali and a cross-linking agent to produce a paste;
 - (b) feeding the paste into an extruder to produce an extrudate;
 - (c) aging the extrudate; and
 - (d) grinding the extrudate.
12. (Withdrawn) The process as defined in claim 11, the paste comprising from 0.001 to 2.0% (w/w) of the crosslinking agent.
13. (Withdrawn) The process as defined in claim 11, the paste comprising from 0.001 to 2.0% (w/w) of the alkali.
14. (Withdrawn) The process as defined in claims 10 and 11, the paste having a moisture content ranging from 25 % to 45 %.

15. (Withdrawn) The process, as defined in claim 12, wherein the cross-linking agent is being selected from the group consisting of sodium trimetaphosphate, sodium tripolyphosphate, phosphoryl oxychloride, phosphorous chloride, epichlorohydrin, divinyl sulfone, chlorohydrin, bromohydrin, N,N'-Methylenebisacrylamide, alkylenebisacrylamides, ethylene glycol diglycidyl ether, diepoxyalkanes, diglycidyl ethers, glyoxal, glutaraldehyde, dialdehydes, activated polyethylene glycols and mixtures thereof.
16. (Withdrawn) The process as defined in claim 15, wherein the cross-linking agent is being selected from the group consisting of sodium trimetaphosphate, sodium tripolyphosphates and phosphorous oxychloride.
17. (Withdrawn) The process as defined in claim 16, wherein the cross-linking agent is sodium trimetaphosphate.
18. (Withdrawn) The process as defined in claim 13, wherein the alkali is being selected from the group consisting of sodium hydroxide, potassium hydroxide, lithium hydroxide, magnesium hydroxide, calcium hydroxide, beryllium hydroxide, ammonium hydroxide, sodium carbonate, sodium bicarbonate, potassium carbonate, potassium bicarbonate, sodium acetate, potassium acetate, sodium phosphate, sodium hydrogenophosphate, potassium phosphate, potassium hydrogenophosphate and mixtures thereof.
19. (Withdrawn) The process as defined in claim 18, wherein the alkali is sodium hydroxide.
20. (Withdrawn) The process as defined in claims 10 and 11, wherein the extrudate has a temperature of at least 130°C.
21. (Withdrawn) The process as defined in claim 20 wherein the extrudate is aged at least 48 hours at a temperature of at least 50 °C.
22. (Withdrawn) The process as defined in claims 10 and 11, wherein the grinding produces a particulate material comprising particles ranging in size from 89 µm to 589 µm.
23. (Previously presented) An absorbent mixture comprising:
 - a) a particulate absorbent material as defined in claim 1; and
 - b) a co-absorbent material.

24. (Previously presented) The absorbent mixture as defined in claim 23, wherein the absorbent material comprises particles ranging in size from 89 to 589 microns.
25. (Previously presented) The absorbent mixture as defined in claim 24, wherein the co-absorbent material is selected from the group consisting of synthetic superabsorbent polymers, mannose containing polysaccharides, ionic polysaccharides, fibers and mixtures thereof.
26. (Withdrawn) The absorbent mixture as defined in claim 25, wherein the synthetic superabsorbent polymers are obtained by polymerization of monomers selected from the group consisting of acrylic acid, acrylate salts, acrylic ester, acrylic anhydride, methacrylic acid, methacrylate salts, methacrylic esters, methacrylic anhydride, maleic anhydride, maleic salts, maleate esters, acrylamide, acrylonitrile, vinyl alcohol, vinyl pyrrolidone, vinyl acetate, vinyl guanidine, aspartic acid, aspartic salts and mixtures thereof.
27. (Withdrawn) The absorbent mixture as defined in claim 25, wherein the mannose containing polysaccharides are selected from the group consisting of guar gum, tara gum, locust bean gum, konjac, mesquite gum, psyllium extracts, fenugreek extracts and mixtures thereof.
28. (Withdrawn) The absorbent mixture as defined in claim 25, wherein the ionic polysaccharides comprise anionic and cationic polysaccharides.
29. (Withdrawn) The absorbent mixture as defined in claim 28, wherein the anionic polysaccharides are selected from the group consisting of carboxyalkyl polysaccharides, oxidized polysaccharides, sulphated polysaccharides, polysaccharides half-esters, carboxymethyl cellulose, carboxymethyl starch, xanthan, carrageenans, pectin and mixtures thereof.
30. (Currently amended) The absorbent mixture as defined in claim 25, wherein the fibers are selected from the group consisting of cellulose, viscose, rayon, cellulose acetate, NylonTM, polyalkylenes, polyethylene, polypropylene, bi-component fibers, polyesters, polylactides, polypropanediols, LyocellTM, sphagnum and mixtures thereof.

31. (Withdrawn) Use of the absorbent mixture of claim 23 in the manufacture of an absorbent product for absorbing liquids, the liquids selected from the group consisting of aqueous solutions, water, physiological solutions and saline solutions.
32. (Withdrawn) The use as defined in claim 31, wherein the absorbent product is selected from the group consisting of diapers, incontinence articles, sanitary napkins, water-storing materials, absorbent paper products, surgical absorbents, pet litter, bandages, wound dressings and food absorbent pads.
33. (Withdrawn) Use of the particulate absorbent material of claim 1 in the manufacture of an absorbent product for absorbing liquids, the liquids selected from the group consisting of aqueous solutions, water, physiological solutions and saline solutions.
34. (Withdrawn) The use as defined in claim 33, wherein the absorbent product is selected from the group consisting of diapers, incontinence articles, sanitary napkins, water-storing materials, absorbent paper products, surgical absorbents, pet litter, bandages, wound dressings and food absorbent pads.
35. (Original) The particulate absorbent material of claim 1, being characterized by a free swell capacity of at least 13 g/g and a centrifuge retention capacity of at least 10 g/g.